

are put forward to appreciate its value. The important factors are that such an investigation could and should be repeated in this country without delay and that we now have sufficient evidence about the development of antisocial behaviour in children to justify a very much greater concentration of effort and resources in our primary schools.

There are, in every decade, a handful of books destined to become landmarks in the history of social science research. I believe that Dr. Robins's book is one of them.

J. CARLEBACH

### SCIENTIFIC RESEARCH

**Commoner, Barry.** *Science and Survival*. London, 1966. Gollancz. Pp. 128. Price 21s.

**Glass, Bentley.** *Science and Ethical Values*. Chapel Hill, N.C., 1966. North Carolina University Press (London, Oxford University Press). Pp. ix + 101. Price 28s. in U.K.

FOR MANY YEARS Professor Commoner has been surveying the directions in which scientific research moves under the guidance of commercial interest, governmental finance, and the predilection of scientists. The last is the least influential. Commoner has not been content merely to survey and, as a rule, condemn, but has taken an active part in calling public attention to the present state of affairs and in devising means of improvement—notably through participation in the “Committee on Science in the Promotion of Human Welfare” of the American Association for the Advancement of Science, in the St Louis Committee for Nuclear Information, and in the Scientist’s Institute for Publication Information. The last co-ordinates the work of some twenty scientist’s information groups throughout the United States. These groups are concerned with spreading information that interested parties may hope will not become widely known, and are not to be confused with the scientific cliques that are now appearing and that restrictively distribute prepublication accounts of their latest conclusions.

*Hubris* among scientists and technologists, and ignorance (or more seriously, ignorance that they are ignorant) among politicians, are the primary themes of this book. It starts by discussing the still unexplained power failure in November 1965 over 80,000 square miles of Canada and USA. From this example of the quasi-epilepsy that can overtake a fully automated power supply, he goes on to deal with the pollution of the environment with motor exhaust fumes, detergents, insecticides and herbicides. He contends, not that all these things should forthwith be stopped at source, but that there should be informed discussion about the advantages and dangers arising from each potentially polluting activity.

About half the book deals with two aspects of genetics. The less valid aspects of biochemistry are now conveniently grouped together under the title “Molecular Biology” with its cabalistic symbol: spiral DNA. Commoner naturally does not dispute the significance of DNA and RNA in the functioning of the cell; all cellular constituents are in varying degrees significant. What he condemns is nucleic acid obsession and consequent neglect of other aspects of metabolism. This leads to a spate of premature dogmatic generalization, and the *hubristic*, or “nothing but” assumption that we now know the general shape of phenomena and have only to fill in some details. I have suggested the term *alethocleidic* for this pernicious attitude of mind.

The testing of nuclear bombs brings in the other aspect of genetics. It would be charitable to assume that the official experts, on both sides of the Atlantic, made a few honest mistakes in their statements during the 1950s minimizing the hazards of nuclear testing. But they cannot all have been mistakes for much of the information later used to reconcile bomb enthusiasts to the “Test Ban Treaty” was generally available. I surveyed some of it myself in 1957, and the St. Louis Committee was documenting the issue at the same time.

## REVIEWS OF BOOKS

As with other forms of pollution, "fall-out" must be judged by comparing the possible gains with the hazards. In the long run, as Commoner points out, little is gained by lying about the hazards.

Professor Bentley Glass is more of an "establishment type" and consequently is more restrained. In essence however he agrees with Commoner in stressing the interrelatedness of organisms, and the need for circumspection in making large scale modifications to the environment. He is equally forthright in opposition to any actions that will produce "fall-out" for he is confident that any increases in the mutation rate would be harmful. Glass does, however, put the matter into non-political perspective by pointing out that mutation rate depends on temperature and therefore that the wearing of trousers rather than kilts may produce as many harmful mutations as all the other agencies. Besides dealing with issues of universal interest, he discusses several that are parochial. There is a curious diatribe against editorial referees and scientific committee men who are accused of delaying publication, withholding grants, and pinching results or ideas. I am as prone to think ill of my fellow men as most, but I doubt if conditions are quite as bad as Glass makes out.

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## POPULATION

Sheps, Mindel C. and Ridley, Jeanne Clair (Editors). *Public Health and Population Change*. Pittsburgh, 1966. The University Press. Pp. xvii + 557. Price \$10.

THE TWENTY-SEVEN PAPERS in this volume were read at a Symposium organized at the University of Pittsburgh in 1964. Like the corresponding events which have been arranged annually by the Eugenics Society, its purposes included the promotion of understanding and communication among workers in varied techniques, including biology and the social sciences. The inter-disciplinary emphasis was here, however, mainly on public health and demography; thus, Part VII of the book consists of an address by Dr. Crabtree on the public health aspects of the population problem. Another principal axis of discussion was the identification of issues upon which research is needed; this is reflected in a Report on the Symposium, written by the Editors, which appears in Part VI, and in the character of many of the contributions.

The aspect of population to which attention was principally directed was fertility, and three groups of papers dealt respectively with natality, the physiology of reproduction, and birth control. Other topics given special emphasis were population policy and methods of measurement and evaluation.

Part I of the volume commences strongly with a good account by Professor Glass of the questions that need investigation if we are to understand better the relationships between population policy and demographic events. Historical research, as well as the analysis of present-day statistics, is playing an important part in the development of this important subject. Professor Thomas McKeown stresses the uncertainty of the contribution of medicine in the past to the fall in mortality in Western countries, which he attributes more to increasing economic prosperity in the early phases, and to sanitation in the later ones. He feels that the most important aim for the future is not a pill but to convince ordinary people in the less developed countries of the need for smaller families. Dr. Judith Blake, following up on this theme, argues in favour of "policies expressly related to family roles, and opportunities for legitimate alternative satisfactions and activities" as the "crux of future reduction in family size". Such policies do not require economic advance as a pre-condition, and should replace present policies, which are proving ineffective. Professor Brewster Smith deals with the psychological elements associated with the problem of conveying, one way or another, to the general mass of the people the message that a new way